

### **REMARKS/ARGUMENTS**

Claims 1-12, 14, 17-26, 29, 37-62, and 65-94 were pending. By this amendment, claims 1, 5, 38, 44, 56, 62, 65, 67, 72, 75, 78, 87, 90 and 93 have been amended, leaving claims 1-12, 14, 17-26, 29, 37-62, and 65-94 for examination.

In the office action, the Examiner rejected claims 1-12, 17, 18, 26, 37-62, 65-83, and 87-94 under 35 USC §103(a) as being anticipated by U.S. Patent No. 5,870,412 issued to Schuster (hereinafter "Schuster") in view of U.S. Patent No. 6,018,766 issued to Samuel et al. (hereinafter "Samuel"), and rejected claims 19-22 and 84-86 under 35 USC §103(a) as being unpatentable over Schuster in view of Samuel in further view of U.S. Patent No. 6,434,619 issued to Lim et al. (hereinafter "Lim"), and rejected claims 14 and 23-25 under 35 USC §103(a) as being unpatentable over Schuster in view of Samuel in further view of U.S. Patent No. 5,948,061 issued to Merriman et al. (hereinafter "Merriman"). Applicants submit that this amendment is fully responsive to each of these rejections, and respectfully request reconsideration.

A request for continued examination is filed herewith. Applicants aver that no new matter has been introduced in this response.

### **Interview with Examiner**

Applicants note with appreciation the telephone interviews conducted with the Examiner regarding various aspects of the office action culminating in a final interview conducted on November 14, 2005. In general, we discussed with the Examiner over the course of the interviews the merits of the claimed invention over the cited prior art and addressed concerns by the Examiner as to the clarity of the claim elements relative to embodiments of the invention disclosed in the specification. In particular, during the interviews the Examiner expressed concern over the use of the term "independent" as being vague and should be clarified by additional amendments. In our last interview, we agreed to amend the claims to more clearly recite the invention as discussed with the Examiner. Accordingly, the claims have been amended with respect to the Examiner's comments and recommendations.

**§103(a) Rejections**

Claims 1-12, 17, 18, 26, 37-62, 65-83, and 87-94 stand rejected under 35 USC §103(a) as being unpatentable over Schuster in view of Samuel. Applicants respectfully assert that claim 1 as amended and therefore dependent claims 11, 12, 30, 31, 37, independent claim 38 and dependent claims 39-41 and 43, independent claim 44 and dependent claims 45-55, independent claim 56 and dependent claims 57-62, independent claim 65 and dependent claim 66, independent claim 67 and dependent claims 68-71, independent claim 72 and dependent claims 73-74, independent claim 75 and dependent claims 76-86, independent claim 87 and dependent claims 88-92, and independent claim 93 and dependent claim 94 are allowable over those references.

Claims 19-22 and 84-86 stand rejected under 35 USC §103(a) as being unpatentable over Schuster in view of Samuel in further view of Lim. Claims 14 and 23-25 stand rejected under 35 USC §103(a) as being unpatentable over Schuster in view of Samuel in further view of Merriman. Applicants respectfully assert that claim 1 as amended and therefore dependent claims 19-22, and independent claim 75 and dependent claims 84-86 are allowable over Schuster alone or in combination with Samuel and/or Lim. Applicants respectfully assert that claim 1 as amended and therefore dependent claims 14 and 23-25 are allowable over Schuster alone or in combination with Samuel and/or Merriman.

**Schuster in view of Samuel**

**Claims 1, 38, 44, 56, 65, 67, 72, 75, 87, 93**

Applicants respectfully assert that claims 1, 38, 44, 56, 65, 67, 72, 75, 87, and 93 are allowable over Schuster and Samuel alone or in combination as these references fail to disclose or suggest each element of the claims. For example, claims 1, 38, 44, 56, 65, 67, 72, 75, 87, and 93 recite in part packets or packet payloads including “a random or pseudorandom set of output symbols,” claims 1, 38, 44, 56, 67, and 75 recite in part “each ...packet ... *transmitted* at

any particular time to some or all of the plurality of clients is independent of which ...packet(s) ... had been previously correctly received by various ones of the clients.”

With regard to serving content from a content server, claims 1, 38, 44, 56, and 72 recite in part “serving content from a content server to multiple clients” where “each of the plurality of ...clients... is capable of reconstructing the content after correctly receiving a number of different output symbols sufficient in quantity to reconstruct the data to a desired accuracy from those different output symbols.”

With regard to clients receiving packets, claims 75, 87, and 93 recite in part “each packet *received* at any particular time to the client is independent of which packets had been previously correctly received by the client.”

Schuster discloses a forward error correction code scheme where a forward error correction code is appended to a sequential series of payload packets. Schuster relies on an XOR sum of a *specified number of sequential preceding payload packets* (emphasis added) to replace packets that are lost or corrupted. Schuster requires a built in forward error correction code  $FEC[k]$  for each payload packet  $P[k]$  where  $FEC[k]=P[k-1] \text{ XOR } PL[k-2] \text{ XOR}$ , and so on. Further, Schuster teaches a predetermined sliding window “w” that works with the *sequential series of packet payloads*, where the number w is more than 1. The predetermined number w defines the window in which the XOR operation is taken and defines the length of the burst error or number of lost packets *in a row* that the system is able to recover. Therefore, Schuster teaches *reliance on receiving specific packets in a specific order with specific content* correlated with the sequence number of the missing or corrupted packets in order to recover data (see Abstract, FIG. 2-7, col. 5, line 1 to col. 6, line 54, col. 7 lines 1-52, col. 107 lines 35-51, and col. 108 lines 10-24 of Schuster).

*By contrast, the present claims cited above recite the use of encoded output symbols as such that clients receiving packets randomly or pseudorandomly are capable of reconstructing the data after receiving encoded output symbols from the packets in sufficient quantity in order to recover the data to a desired accuracy* (emphasis added).

Applicants submit that Samuel fails to make up for what Schuster lacks. Samuel discloses a method for deploying interactive applications over a network containing host computers and group messaging servers operating in a conventional unicast environment. Schuster and Samuel fail to disclose or suggest alone or in combination at least the claim element of a random or pseudorandom set of output symbols generated from content as disclosed in claims 1, 38, 44, 56, 65, 67, 72, 75, 87, and 93.

Further, with respect to transmitting packets, Schuster and Samuel fail to disclose or suggest the claim element wherein packets are transmitted at any particular time to some or all of the plurality of clients are independent of which packets had been previously correctly received by various ones of the clients, as recited in claims 1, 38, 44, 56, and 72.

With respect to claims 1, 38, 44, 56, and 72, Schuster and Samuel fail to disclose or suggest the claim element wherein each client receiving packets, whether a unicast or a multicast client, is capable of reconstructing the content after correctly receiving a number of different output symbols randomly or pseudorandomly in sufficient in quantity to reconstruct the data to a desired accuracy from those different output symbols.

With respect to claims 75, 87, and 93 Schuster and Samuel fail to disclose or suggest that each packet received at any particular time by a client can be independent of which packets had been previously correctly received by the client. Therefore, as claims 1, 38, 44, 56, 65, 67, 72, 75, 87, and 93 include elements not disclosed by Schuster or Samuel, taken alone or in combination, Applicants submit claims 1, 38, 44, 56, 65, 67, 72, 75, 87, and 93 are allowable.

Dependent claims 2-12, 14, 17-26, 29, and 37

Claims 2-12, 14, 17-26, 29, and 37 which depend from claim 1, are allowable for at least the reasons discussed in relation to claim 1, as well as the limitations they recite.

Dependent claims 39-43

Claims 39-43 which depend from claim 38, are allowable for at least the reasons discussed in relation to claim 38, as well as the limitations they recite.

Dependent claims 45-55

Claims 45-55 which depend from claim 44, are allowable for at least the reasons discussed in relation to claim 44, as well as the limitations they recite.

Dependent claims 57-64

Claims 57-64 which depend from claim 56, are allowable for at least the reasons discussed in relation to claim 56, as well as the limitations they recite.

Dependent claim 66

Claim 66 which depends from claim 65, is allowable for at least the reasons discussed in relation to claim 65 as well as the limitations it recites.

Dependent claims 68-71

Claims 68-71 which depend from claim 67, are allowable for at least the reasons discussed in relation to claim 67, as well as the limitations they recite.

Dependent claims 73-74

Claims 73-74 which depend from claim 72, are allowable for at least the reasons discussed in relation to claim 72, as well as the limitations they recite.

Dependent claims 76-86

Claims 76-86 which depend from claim 75, are allowable for at least the reasons discussed in relation to claim 75, as well as the limitations they recite.

Dependent claims 88-92

Claims 88-92 which depend from claim 88, are allowable for at least the reasons discussed in relation to claim 88, as well as the limitations they recite.

Dependent claim 94

Claim 94 which depends from claim 93, is allowable for at least the reasons discussed in relation to claim 93 as well as the limitations it recites.

Schuster in view of Samuel in further view of Lim

Claims 19-22 and 84-86

As argued above, Schuster and Samuel fail to disclose all of the elements of claim 1 and 75. Applicants submit that Lim fails to make up for what those other references lack. For example, as recited above, amended claims 1 and 75 recite in part, “a random or pseudorandom set of output symbols,” and “each packet transmitted at any particular time to some or all of the plurality of clients is independent of which packets had been previously correctly received by various ones of the clients, and wherein each of the plurality of clients is capable of reconstructing the content after correctly receiving a number of different output symbols sufficient in quantity to reconstruct the data to a desired accuracy from those different output symbols,” claim 75 recites in part “each packet received at any particular time to the client is independent of which packets had been previously correctly received by the client”, and “after randomly or pseudorandomly receiving an N1 number of the output symbols in packets received from the stream of packets, wherein N1 is a positive integer greater than 1 and less than N, regenerating the content to a desired accuracy with the received output symbols.”

Lim teaches a system that allows a customer (e.g., subscriber) to monitor their network endpoints and the status of their connections provided by the service provider.

Lim does not disclose where each packet **transmitted** at any particular time to some or all of the plurality of clients is independent of which packets had been previously correctly received by various ones of the clients, nor each of the plurality of clients is capable of reconstructing the content after correctly receiving a sufficient number of different output symbols to reconstruct the data, nor each packet **received** at any particular time by a client is independent of which packets had been previously correctly received by the client. Therefore, as claim 1, and dependent claims 19-22 and independent claim 75 and dependent claims 84-86

include elements not disclosed by Schuster nor in combination with, or taught by Samuel, nor Lim, Applicants submit claims 19-22 and 84-86 are allowable.

**Schuster in view of Samuel in further view of Merriman**

**Claims 14 and 23-25**

As argued above, Schuster and Samuel fail to disclose all of the elements of claim 1. Applicants submit that Merriman also fails to make up for what those other references lack. As described above, amended claim 1 recites in part, “a random or pseudorandom set of output symbols,” and “each packet transmitted at any particular time to some or all of the plurality of clients is independent of which packets had been previously correctly received by various ones of the clients, and wherein each of the plurality of clients is capable of reconstructing the content after correctly receiving a number of different output symbols sufficient in quantity to reconstruct the data to a desired accuracy from those different output symbols.”

Merriman teaches an advertising server used to transmit advertising of affiliated sites based on a targeted profile. Merriman also discloses that data is tracked on how often a given advertisement has been displayed (Merriman, Abstract, FIG. 1-2, col. lines 6-45). Merriman does not disclose a random or pseudorandom set of output symbols, nor where each packet **transmitted** at any particular time to some or all of the plurality of clients is independent of which packets had been previously correctly received by various ones of the clients, nor each of the plurality of clients is capable of reconstructing the content after correctly receiving a sufficient number of different output symbols to reconstruct the data. Therefore, as claim 1, and dependent claims 14 and 23-25 include elements not disclosed by Schuster nor in combination with, or taught by Samuel, nor Merriman, Applicants submit claims 14 and 23-25 are allowable.

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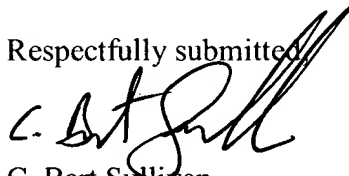
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**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 576-0200.

Respectfully submitted,



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